

# STEM-H

**Demand for STEM-H Skills Outpace  
Overall Growth**

9.10.2012

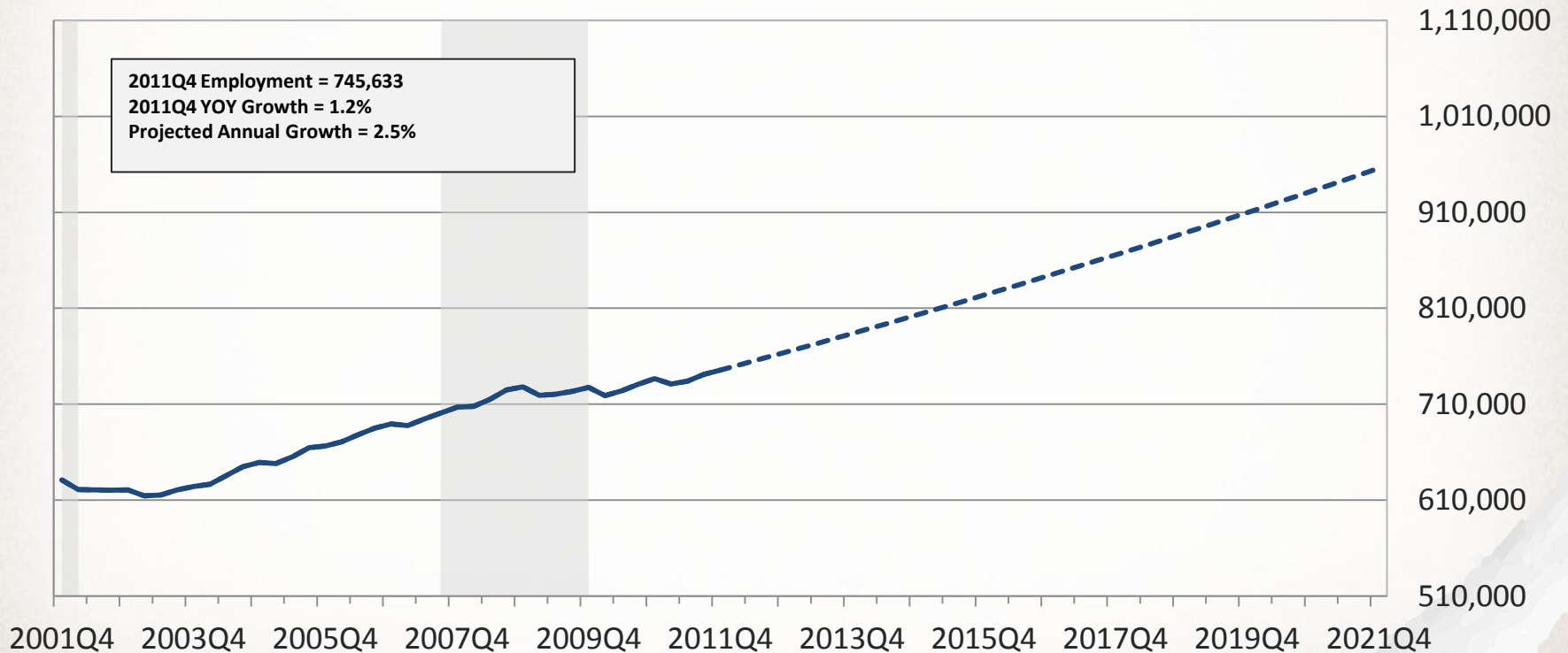
# CHMURA ECONOMICS & ANALYTICS

# STEM-H: Science Technology Engineering Math + Health Care

- What are STEM-H jobs?
- **STEM** - H
  - Computer-related occupations
  - Engineers and Technicians
  - Operations Research Analysts, Mathematicians
- STEM - **H**
  - Doctors, Dentists, Nurses, Pharmacists
  - Assistants and technicians in healthcare
- Is Virginia prepared?

# STEM-H Expected to Grow Faster than the 1.7% Annual Average for All Industries

Employment Growth in STEM-H Industries  
Historical and Projected, Virginia



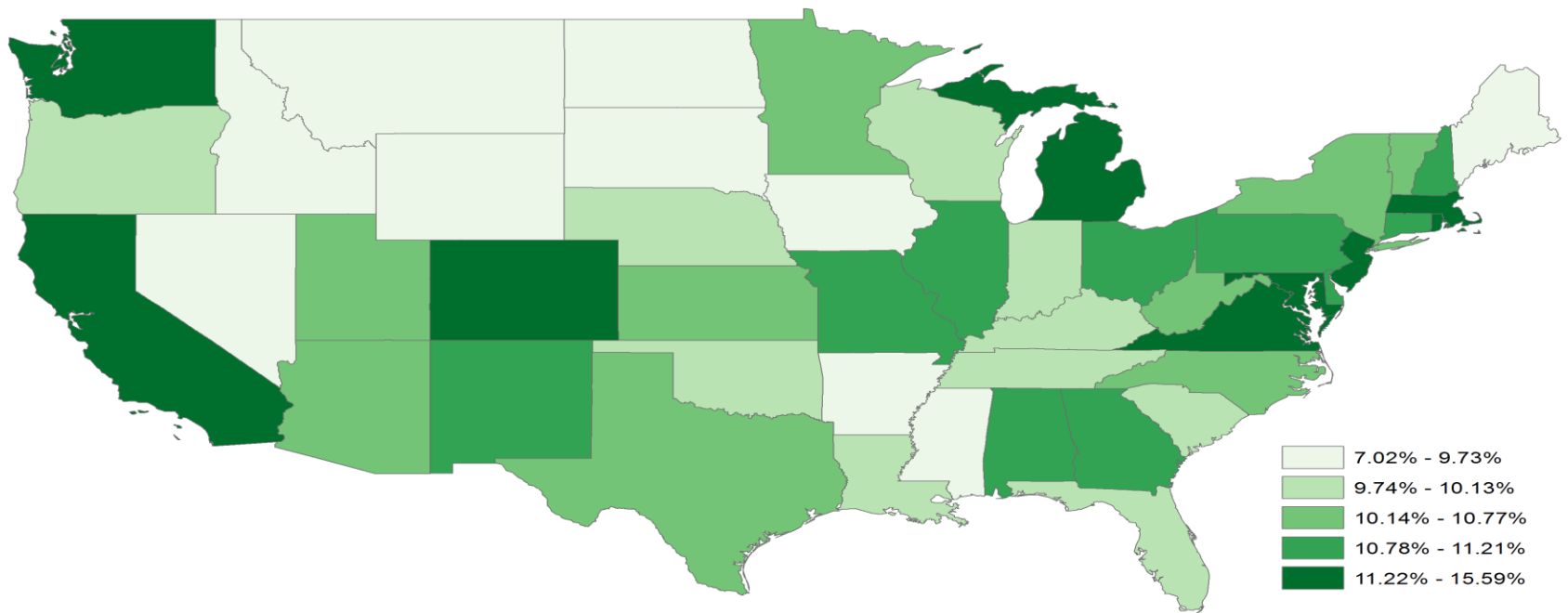
Note: shaded areas represent recessions.

Source: JobsEQ and the Bureau of Labor Statistics

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# Concentration of STEM-H Job Needs

Percentage of Jobs in STEM-H Due to Expanding Payrolls and Retirement from 2012-2016 Relative to Total 4-Yr Job Needs



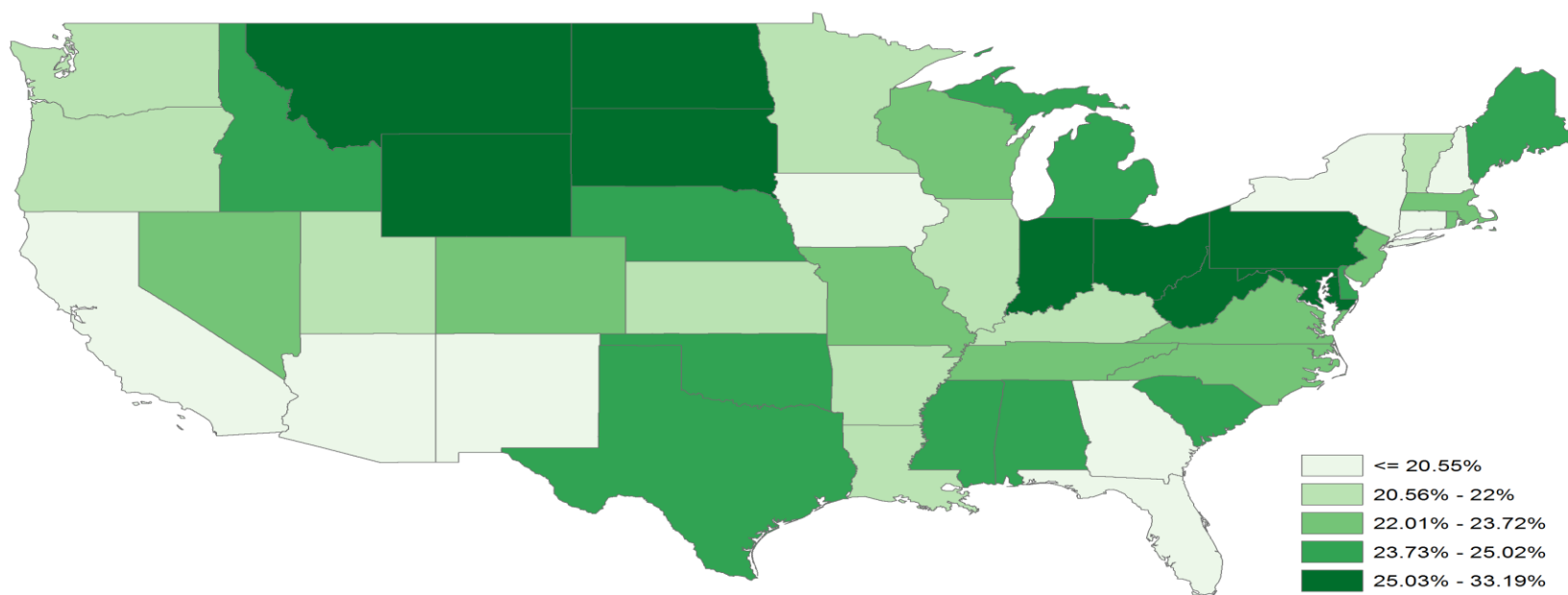
In Virginia, 13.8% of all the jobs to be filled in the next 4 years are expected to be STEM-H.

Source: Chmura Economics & Analytics

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# STEM-H Post-secondary Awards

Percentage of Post-Secondary Awards that were STEM-H in 2011



In Virginia, 23.1% of all post-secondary awards were STEM-H.

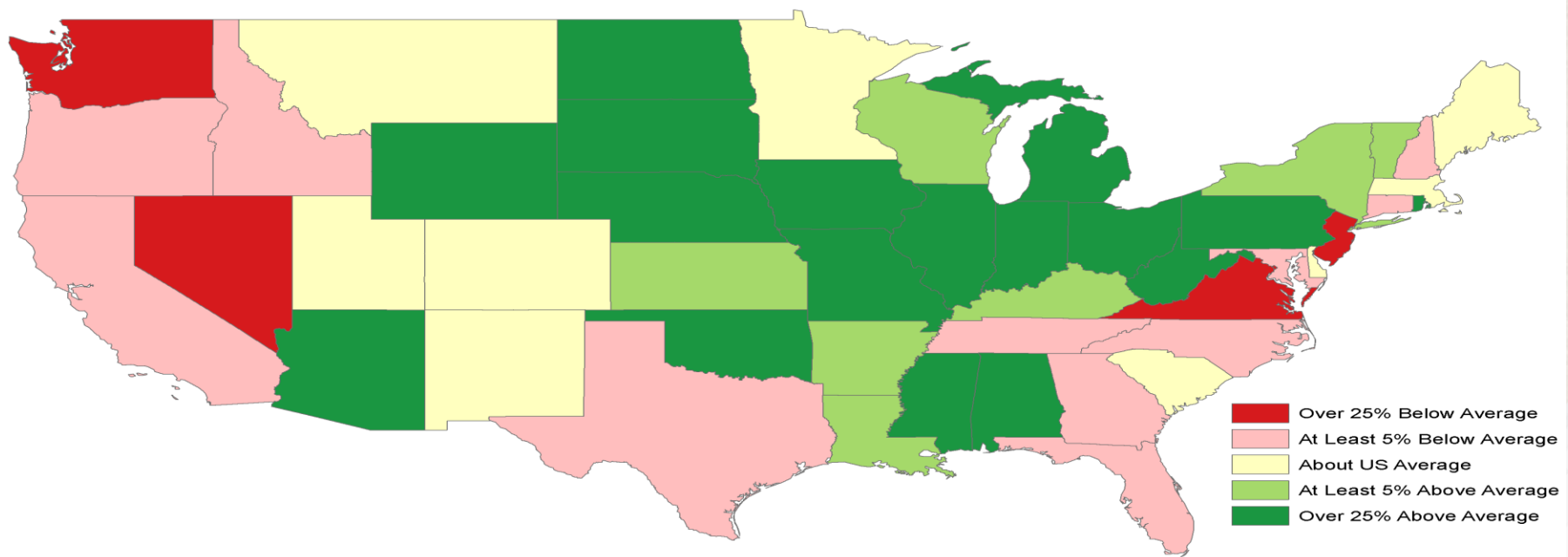
Source: NCES

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# STEM-H Award Alignment with Employer Needs

STEM-H Awards Relative to the U.S. Average



Virginia needs to graduate 28% more STEM-H students  
To reach the national average (STEM-H awards / STEM-H demand).

Source: Chmura Economics & Analytics and NCES

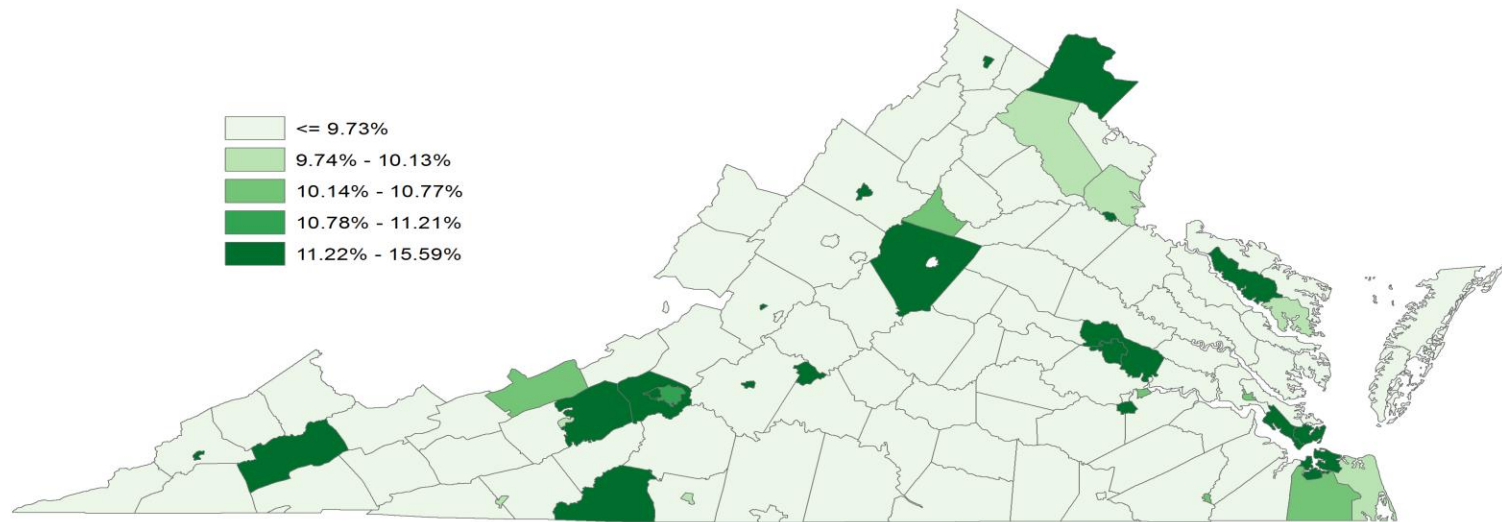
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# Where are Some of the Alignment Issues in Virginia?

- Under producing
  - Aerospace engineering and operations technician
  - Nuclear engineers
  - Electrical engineers
  - Computer support specialists
- Over producing
  - Forensic science technicians
  - Industrial engineering technicians
  - Industrial engineers

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Source: Chmura Economics & Analytics

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# Occupation Needs Vary by Region

How Do We Know if We our Students are Getting Skills needed by Businesses?

## Top 10 Occupations Needed by Businesses Over the Next Decade

### Northern Virginia MSA

Customer Service Representatives

**Software Developers, Applications**

**Computer Support Specialists**

**Computer Systems Analysts**

Management Analysts

**Software Developers, Systems Software**

General and Operations Managers

Registered Nurses

Elementary School Teachers, Except Special Education

Accountants and Auditors

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Top 10 Occupations Needed by Businesses Over the Next Decade	
Northern Virginia MSA	Danville MSA
Customer Service Representatives	<b>Registered Nurses</b>
<b>Software Developers, Applications</b>	Customer Service Representatives
<b>Computer Support Specialists</b>	Elementary School Teachers, Except Special Education
<b>Computer Systems Analysts</b>	<b>Licensed Practical and Licensed Vocational Nurses</b>
Management Analysts	First-Line Supervisors of Office and Administrative Support Workers
<b>Software Developers, Systems Software</b>	Teacher Assistants
General and Operations Managers	Secondary School Teachers, Except Special and Career/Technical Education
<b>Registered Nurses</b>	<b>Automotive Service Technicians and Mechanics</b>
Elementary School Teachers, Except Special Education	Social and Human Service Assistants
Accountants and Auditors	<b>Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products</b>

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# Conclusions

- STEM-H jobs are growing faster than any other industry.
- There is a disconnect between Virginia's STEM-H job needs and Virginia's ability to create skilled applicants.
- There is room for improvement on the type of STEM-H occupations offered by higher education.